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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Charles Cobb

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04/21/2006

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EXAMINER

FERNANDEZ, SUSAN EMILY

ART UNIT

PAPER NUMBER

1651

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/767,466

Applicant(s)

COBB, CHARLES

Examiner

Susan E. Fernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed January 31, 2006, has been received and entered. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.

Claims 1-20 are pending and examined on the merits.

Claim Rejections - 35 USC § 112

Claims 11-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, claim 11 recites a composition where the dry exogenous phytase and cellulase enzymes are enzymes "adapted to be applied to the ruminant feed in a dry state." However, the specification does not disclose that these enzymes are applied to the feed in a "dry state." Pages 11 and 12 of the specification disclose some ways in which the enzyme composition may be used, wherein five of the six ways (paragraphs [0047]-[0054]) require that the enzyme composition is diluted in water or in liquid form. The last method discussed in which the enzyme composition is used is provided in paragraph [0055], in which a high moisture grain is treated with the enzyme composition. For this method, the enzyme composition is not expressly disclosed as being applied in "a dry state," and since the grain is "high moisture," it is not apparent that the enzyme composition would have been in the "dry state" once applied on the grain. The moisture of the grain would have dampened the enzyme composition. In sum, no examples of the specification show that the enzymes within the enzymes composition are

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“adapted to be applied to the ruminant feed in a dry state,” nor is this requirement explicitly stated. Because the specification as filed fails to provide clear support for the new claim language, a new matter rejection is clearly proper.

Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 is indefinite because it is not clear whether the enzymes beta-glucanase, amylase, and hemicellulase are exogenous. Thus, claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph.

Claim 14 is indefinite because of the phrase, “exogenous enzymes”. It is not clear whether the “exogenous enzymes” are only exogenous phytase, exogenous cellulase, and exogenous pectinase. Thus, claim 14 is rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 102

Claims 1, 3, 11, 13, 15-17, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Maenz et al. (GB 2,340,727).

Maenz et al. recites a process for producing an animal feed comprising the step of converting the feed's phytate, a major storage form of phosphorus in plants (page 1, lines 10-12), into inorganic phosphate, which is a bio-available form (page 2, lines 13-15). See claim 15. The food which is treated by the methods recited by Maenz et al. can be any food which contains phytate (page 6, lines 11-12). Note that the treated food can be maize (page 6, line 20), thus

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meeting the limitation recited in instant claim 18. Furthermore, the feed obtained by the Maenz methods may be feed to cattle (page 10, line 13), thus meeting the limitations recited in instant claims 19 and 20.

Phytate conversion occurs by mixing a slurry comprising of phytase and the phytate-containing food (claim 1). Moreover, the slurry may further comprise of one or more enzymes, selected from the following: cellulase, xylanase (known as a hemicellulase), amylase, pectinase, and beta-glucanase (page 9, lines 12-20). Inclusion of these enzymes is a preferred embodiment, since "such enzymes may help to liberate the phytate from plant bodies rendering it more susceptible to the action of the phytase and/or act upon other of the food components in order to improve their digestibility" (page 9, lines 21-24).

Note that claim 1 of Maenz et al. recites a slurry comprising the phytate-containing food, a solvent mixture comprising water and a water immiscible organic solvent, and a phytase. The portion of the slurry which excludes phytate-containing food AND the water immiscible organic solvent can be considered a "miscible product" comprising water and phytase. As discussed above, the slurry may further comprise other enzymes such as cellulase, thus the "miscible product" in the slurry comprises water, phytase, and cellulase as required by instant claims 1 and 15.

Moreover, the enzyme compositions of claims 11 and 13 under examination are anticipated by the reference since the slurry comprising the phytase and optionally other enzymes is dried (see claim 1, wherein the food is dried to remove the organic solvent). Thus, the resulting dried composition comprises dried phytase and dried cellulase. Note that the instant disclosure has not demonstrated how the dry exogeneous phytase and the dry exogenous

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cellulase are “adapted to be applied to the ruminant feed in a dry state,” thus any composition comprising dry exogeneous phytase and dry cellulase anticipates instant claim 11. Additionally, according to M.P.E.P. §2111.03, “the transitional phrase ‘consisting essentially of’ limits the scope of a claim to the specified materials or steps ‘and those that do not materially affect the basic and novel characteristic(s)’ of the claimed invention.” Further still, M.P.E.P. §2111.03 states that “for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, ‘consisting essentially of’ will be construed as equivalent to ‘comprising’.” Though the Maenz composition includes ingredients other than dry phytase and dry cellulase, there is no showing that the additional ingredients materially change the characteristics of the applicant’s invention. Since the applicant has not demonstrated that the additional ingredients of the Maenz invention would materially change the characteristics of the applicant’s invention, the Maenz invention anticipates the composition of instant claims 11 and 13.

Applicant's arguments filed January 31, 2006, have been fully considered but they are not persuasive. As discussed above, though the slurry obtained from practicing the Maenz method comprises a water-immiscible organic solvent, it also comprises a miscible composition containing phytase enzyme, cellulase enzyme, and water. Therefore, contrary to applicant’s assertions on page 5 and 6 of the response, Maenz et al. anticipates the composition of claim 1. A holding of anticipation is clearly required.

Claims 11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Barendse et al. (US 5,827,709).

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Barendse et al. discloses a solid enzyme composition obtained by drying a solution comprising a mixture of phytase and cellulase (claims 1 and 4). Thus, the resulting enzyme composition comprises dry phytase and dry cellulase. Furthermore, Barendse et al. teaches an animal feed comprising this solid enzyme composition (claim 6). The composition of Barendse et al. may further comprise pectinases, beta-glucanases, amylases, and hemicellulases (column 3, lines 19-23), and the enzymes included in the composition may be derived from *Aspergillus niger* (column 3, lines 34-37).

Note that the instant disclosure has not demonstrated how the dry exogeneous phytase and the dry exogenous cellulase are “adapted to be applied to the ruminant feed in a dry state,” thus any composition comprising dry exogeneous phytase and dry exogeneous cellulase anticipates instant claim 11. Additionally, according to M.P.E.P. §2111.03, “the transitional phrase ‘consisting essentially of’ limits the scope of a claim to the specified materials or steps ‘and those that do not materially affect the basic and novel characteristic(s)’ of the claimed invention.” Further still, M.P.E.P. §2111.03 states that “for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, ‘consisting essentially of’ will be construed as equivalent to ‘comprising’.” Therefore, though the Barendse composition includes ingredients other than dry phytase and dry cellulase, it is considered anticipatory of the compositions recited in the claims since there is no showing that the additional ingredients materially change the characteristics of the applicant’s invention. The burden is on applicant to demonstrate that the additional ingredients of the Barendse invention would have such an effect. Thus, a holding of anticipation is clearly required.

Claim Rejections - 35 USC § 103

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barendse et al. in view of Cobb et al. (US 6,623,750).

As discussed above, Barendse et al. anticipates claims 11, 13, and 14. However, Barendse et al. does not expressly disclose that the cellulase in the composition is derived from *Trichoderma viride*, or that any of the enzymes included in the Barendse composition are obtained from *Bacillus subtili* or *Aspergillus oryzae* fermentation extracts.

Cobb et al. discloses a method of increasing protein digestibility of a grain in ruminants comprising the steps of treating the grain with the following exogenous enzymes: pectinase, beta-glucanase, amylase, hemicellulase, and *T. viride* cellulase (claim 1). Additionally, the enzymatic composition for treating the grain (such as corn) includes fermentation extracts of *A. niger*, *B. subtili*, *T. viride*, and *A. oryzae* (column 8, lines 1-7).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have used the fermentation extracts of *A. niger*, *B. subtili*, *T. viride*, and *A. oryzae* to obtain enzymes for use in the Barendse composition. One of ordinary skill in the art would have been motivated to do this since the artisan of ordinary skill would have recognized the suitability of using these sources to obtain enzymes required by the Barendse composition for inclusion in animal feed. Moreover, the enzymes disclosed by Cobb et al. were shown to increase protein digestibility of ruminant feed, and this would have been a desirable effect to obtain when treating ruminant feed with the Barendse enzyme composition. Thus, a holding of obviousness is clearly required.

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Claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenz et al. in view of Vanderbeke et al. (US 5,443,979), Winthrop et al. (US 3,812,013), and Mantha (EP 571,464).

As discussed above, Maenz et al. anticipates claims 1, 3, 11, 13, 15-17, 19, and 20. However, Maenz et al. does not expressly disclose that the feed is treated with dry forms of phytase and cellulase.

Vanderbeke et al. discloses a dried phytase preparation (column 8, lines 66-67).

Winthrop et al. discloses a dried cellulase enzyme (claim 1).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have included dried phytase and dried cellulase in the slurry of the Maenz invention. One of ordinary skill in the art would have been motivated to do this since the artisan of ordinary skill would have recognized the suitability in using any form of the enzymes, including the dried form, which are active. Though the enzymes become wet when added to the slurry of Maenz et al, the addition of the dried enzymes to the slurry comprising the phytate containing food is still considered the treatment of the food with dried enzymes. The claims under examination do not require that the enzymes remain dry while the enzymes act on the feed. Thus, in addition to the claims anticipated by Maenz et al, the references render claims 5-7 obvious.

Maenz et al. also does not expressly disclose that the cellulase used for treating animal feed comprises a *Trichoderma viride* cellulase enzyme. Furthermore, it does not expressly

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disclose that any of the enzymes are derived from fermentation extracts of *A. oryzae*. Finally, Maenz et al. does not specify the animals which are fed the treated feed.

Mantha discloses a composition for increasing the milk production and the fat content of milk which comprises of amylase derived from *Aspergillus oryzae* and cellulase derived from *Trichoderma viride* (CAPLUS abstract).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have treated animal feed as disclosed by Maenz et al., with cellulase and amylase derived from *T. viride* and *A. oryzae*, respectively. One of ordinary skill in the art would have been motivated to do this since these particular enzymes would have had the added benefit of increasing milk production and fat content of milk when administered to dairy cows.

Additionally, at the time the invention was made, it would have been obvious to have administered the treated feed obtained by the Maenz invention to dairy cows and beef cattle. One of ordinary skill in the art would have been motivated to do this since it would have improved the digestibility of feed for dairy cows and beef cattle. Moreover, the conversion of phytate to inorganic phosphate would have been desirable since it would have improved the bio-availability of multivalent metal cations for any animal, including dairy cows and beef cattle which are fed plant material (page 1 of Maenz et al., lines 29-32). Finally, compositions comprising cellulase and amylase had been shown by Mantha to have been beneficial in increasing milk production and fat content of milk in dairy cows.

Applicant's arguments have been fully considered but they are not persuasive. First, applicant notes that Mantha fails to teach the inclusion of a phytase in its feed supplement, either in a dry form or in a miscible composition. However, as discussed above, Mantha is provided to

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disclose particular suitable enzymes for inclusion in feed. It is combined with Maenz et al., which teaches a phytase-containing composition in dry and miscible compositions. Therefore, a holding of obviousness is clearly required.

Claims 1-11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenz et al., Vanderbeke et al., Winthrop et al., and Mantha as applied to claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 above, and further in view of Tobey Jr. et al. (US 5,662,901).

As discussed above, Maenz et al., Vanderbeke et al., Winthrop et al., and Mantha render claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 obvious.

However, the references do not expressly disclose treating animal feed with exogenous enzymes obtained from all the fermentation extracts recited in claim 4. In addition, Maenz et al. does not disclose that the treated feed may be corn.

Tobey Jr. et al. discloses an enzymatic grain conditioner for the treatment of animal feed in order to increase the availability to the animal of starch, protein, and other nutrients found in the animal feed (column 1, lines 16-18). For the treatment of grains such as corn, Tobey Jr. advises that an appropriate grain conditioner should comprise of pectinase, beta-glucanase, amylase, and hemicellulase (column 9, lines 62-64). Preferred sources of these enzymes included *A. oryzae*, *A. niger*, and *B. subtilis* (column 5, lines 29-31, 65-67, and column 6, lines 9-11, 17-18).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have obtained the exogenous enzymes disclosed by Maenz et al. from *A. oryzae*, *A. niger*, and *B. subtilis*. One of ordinary skill in the art would have been motivated to do this

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since Tobey Jr. et al. disclosed that exogenous enzymes obtained from these sources are preferred in treating animal in order to improve feed utilization efficiency. The improvement of feed utilization efficiency was a reason Maenz et al. provided for the inclusion of other enzymes besides phytase in the treatment of animal feed (Maenz et al., page 9, lines 21-24).

Furthermore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have treated corn following the procedures disclosed by Maenz et al. One of ordinary skill in the art would have been motivated to do this since corn is a phytate-containing food. Additionally, Tobey Jr. had disclosed that exogenous enzymes are useful in treating corn.

Applicant's arguments have been fully considered but they are not persuasive. Applicant asserts that Tobey fails to teach the use of phytase enzymes in the dry form or in a miscible composition. However, it is respectfully noted that Tobey is used to teach suitable exogeneous enzymes for practicing the Maenz invention, which does teach phytase enzymes in the dry form or in a miscible composition. Furthermore, applicant points out that Tobey's teaching of increased availability relates to organic materials, not inorganic phosphate. However, the increased availability of organic materials, such as starch, protein, and other nutrients, is still a desirable result to obtain in the treatment of feed. Furthermore, the claims do not expressly disclose that exogenous enzymes obtained from fermentation extracts of *A. oryzae*, *A. niger*, and *B. subtilis* are all for increasing the availability of inorganic phosphate in feed. Therefore, there is sufficient motivation to combine the teachings of Tobey Jr. et al. with Maenz et al. Thus, a holding of obviousness is clearly required.

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Claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenz et al., Vanderbeke et al., Winthrop et al., and Mantha as applied to claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 above, and further in view of Nielsen et al. (US 5,989,600).

As discussed above, Maenz et al., Vanderbeke et al., Winthrop et al., and Mantha render claims 1-7, 9, 10, 11, 13, 15-17, 19, and 20 obvious.

However, these references do not expressly disclose that the treatment of animal with multiple enzymes is performed sequentially in any order.

Nielsen et al. discloses a method for improving the solubility of vegetable proteins comprising the steps of: (a) treating the source with phytases, (b) treating the source with proteolytic enzymes, (c) treating the source with lipolytic/glucosidase enzymes (abstract, column 5, lines 7-21). These steps may be carried out as consecutive steps (column 5, lines 22-23). See also claims 14, 15, and 16.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have modified the Maenz invention such that the addition of the enzymes to the animal feed had been performed sequentially.

One of ordinary skill in the art would have been motivated to do this since Nielsen et al., which had taught a similar method using similar enzymes, had indicated that the sequential addition of enzymes to a vegetable protein source was suitable for improving the solubility of vegetable proteins.

Applicant's arguments have been fully considered but they are not persuasive. Applicant asserts that Nielsen fails to teach a composition or a method of combining a phytase enzyme with

a cellulase without the presence of a proteolytic enzyme for the purpose of increasing phosphate retention and decreasing phosphate waste. However, the claims under examination do not recite that the compositions cannot comprise of proteolytic enzyme or that proteolytic enzyme cannot be used. Moreover, applicant states that Nielsen points to the feedstuffs for monogastric animals, and that there is no mention of ruminants in Nielsen. Nevertheless, it is pointed out that column 5, lines 61-63 of Nielsen et al. refers to addition of the invention to “animal feed” and points to “feedstuffs for monogastric animals” only as an example. Thus, Nielsen et al. is applicable to feed for any and all animals, and does not exclude specific animals, such as ruminants. Therefore, the teachings of Nielsen et al. are appropriate for combining with the teachings of Maenz et al. A holding of obviousness is clearly required.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenz et al. in view of Cobb et al. (US 6,623,750) and Vanderbeke et al.

As discussed above, Maenz et al. anticipates claims 1, 3, 11, 13, 15-17, 19, and 20.

However, Maenz et al. does not expressly disclose that the feed is treated with dry forms of phytase and cellulase, that the cellulase is obtained from *T. viride*, or that the exogenous enzymes are obtained from the sources recited in claim 4. Additionally, Maenz et al. does not disclose that the treatment with enzymes occurs sequentially, that the treated feed is corn, or that the treated feed could be fed to dairy cows or beef cattle.

Cobb et al. discloses a method of increasing protein digestibility of a grain in ruminants comprising the steps of treating the grain with the following exogenous enzymes: pectinase, beta-glucanase, amylase, hemicellulase, and *T. viride* cellulase (claim 1). The various enzymes

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used for the invention are in Cattle-Ase-C Dry Formula (column 4, lines 60-64), thus are present in dry form. Furthermore, the treatment steps may be performed sequentially in any order. The ruminants may be dairy cows or beef cattle (claims 3 and 4). Finally, the enzymatic composition for treating the grain (such as corn) includes fermentation extracts of *A. niger*, *B. subtilis*, *T. viride*, and *A. oryzae* (column 8, lines 1-7).

Vanderbeke et al. discloses a dried phytase preparation (column 8, lines 66-67).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have proceeded to the methods of Cobb et al. following the treatment of animal feed with phytase as disclosed by Maenz et al. One of ordinary skill in the art would have been motivated to do this since Maenz et al. had pointed out that the inclusion of exogenous enzymes in addition to phytase in treating animal feed is desirable since "such enzymes may help to liberate the phytate from plant bodies rendering it more susceptible to the action of the phytase and/or act upon other of the food components in order to improve their digestibility" (page 9, lines 21-24). The Cobb invention had resulted in improved digestibility of a grain in ruminants, thus there would have been a reasonable expectation of success in combining the methods of Cobb to the methods of Maenz et al, which seek the same results. Furthermore, one of ordinary skill in the art would have been motivated to have used dried phytase in practicing the Maenz invention since the artisan of ordinary skill would have recognized the suitability in using any form of the enzymes, included the dried form, which are active.

Additionally, it would have been obvious to have treated corn with the above procedures, and have administered the treated feed to dairy cows and beef cattle. One of ordinary skill in the art would have been motivated to do this since the exogenous enzymes (except phytase)

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disclosed in both Maenz et al. and Cobb et al. had been shown in Cobb et al. to be useful in treating corn, where the treated feed may be fed to dairy cows and beef cattle.

Applicant's arguments have been fully considered but they are not persuasive. Applicant asserts that Cobb fails to teach the use of phytase enzymes in either the dry form or in a miscible composition. However, as discussed above, Maenz et al. teaches these aspects of the invention. Thus, a holding of obviousness is clearly required.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan E. Fernandez whose telephone number is (571) 272-3444. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan E. Fernandez
Assistant Examiner
Art Unit 1651

sef



FRANCISCO PRATS
PRIMARY EXAMINER